

1. A nucleic acid molecule comprising a nucleic acid sequence which encodes a polypeptide selected from any one of:

- (a) SEQ ID No: 14;
- (b) an immunogenic fragment comprising at least 50 consecutive amino acids from a polypeptide of (a); and
- (c) a polypeptide of (a) or (b) which has been modified without loss of immunogenicity, wherein said modified polypeptide is at least 75% identical in amino acid sequence to the corresponding polypeptide of (a) or (b).

B2
2. A nucleic acid molecule comprising a nucleic acid sequence selected from any one of:

- Sub C2
- (a) SEQ ID No: 1;
 - (b) a sequence which encodes a polypeptide encoded by SEQ ID No: 1;
 - (c) a sequence comprising at least 38 consecutive nucleotides from SEQ ID No: 1;
 - (d) a sequence which encodes a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by SEQ ID No: 1; and
 - (e) a sequence comprising at least 100 consecutive nucleotides from a nucleic acid sequence of (b).

Sub C2
B3
8. A vaccine comprising a vaccine vector and at least one first nucleic acid selected from any one of:

- (i) SEQ ID No: 1;
- (ii) a nucleic acid sequence which encodes a polypeptide encoded by SEQ ID No: 1;
- (iii) a nucleic acid sequence comprising at least 38 consecutive nucleotides from any one of the nucleic acid sequences of (i) and (ii);
- (iv) a nucleic acid sequence which encodes a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by SEQ ID No: 1;
- (v) a nucleic acid sequence which encodes a polypeptide whose sequence is set forth in SEQ ID No: 14;

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- (vi) a nucleic acid sequence which encodes an immunogenic fragment comprising at least 12 consecutive amino acids from SEQ ID No: 14; and
 - (vii) a nucleic acid sequence which encodes a polypeptide as defined in (i) to (v) or an immunogenic fragment as defined in (vi) which has been modified without loss of immunogenicity, wherein said modified polypeptide or fragment is at least 75% identical in amino acid sequence to the corresponding polypeptide of (i) to (v) or the corresponding fragment of (vi);
- wherein each first nucleic acid is capable of being expressed.

23 9. A vaccine comprising a vaccine vector and at least one first nucleic acid encoding a fusion protein, wherein the fusion protein comprises:

- (a) a first polypeptide selected from any one of:
 - (i) a polypeptide encoded by SEQ ID No: 1;
 - (ii) a polypeptide encoded by a nucleic acid sequence comprising at least 38 consecutive nucleotides from SEQ ID No: 1;
 - (iii) a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by SEQ ID No: 1;
 - (iv) a polypeptide whose sequence is set forth in SEQ ID No: 14;
 - (v) an immunogenic fragment comprising at least 12 consecutive amino acids from SEQ ID No: 14; and
 - (vi) a polypeptide as defined in (i) to (iv) or an immunogenic fragment as defined in (v) which has been modified without loss of immunogenicity, wherein said modified polypeptide or fragment is at least 75% identical in amino acid sequence to the corresponding polypeptide of (i) to (iv) or the corresponding fragment of (v); and
 - (b) a second polypeptide;
- wherein each first nucleic acid is capable of being expressed.

Sub C6
B 18. An isolated nucleic acid probe of 5 to 100 nucleotides which hybridizes under stringent conditions to SEQ ID No: 1, or to a complementary or anti-sense sequence of said nucleic acid molecule.

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B⁺ 19. An isolated primer of 10 to 40 nucleotides which hybridizes under stringent conditions to SEQ ID No: 1, or to a complementary or anti-sense sequence of said nucleic acid molecule.

B 21. A polypeptide comprising an amino acid sequence selected from any one of:

- (a) SEQ ID No: 14;
 - (b) an immunogenic fragment comprising at least 12 consecutive amino acids from a polypeptide of (a); and
 - (c) a polypeptide of (a) or (b) which has been modified without loss of immunogenicity, wherein said modified polypeptide is at least 75% identical in amino acid sequence to the corresponding polypeptide of (a) or (b).
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27. A vaccine comprising at least one first polypeptide selected from any one of:

- B₆
- (i) a polypeptide encoded by SEQ ID No: 1;
 - (ii) a polypeptide encoded by a nucleic acid sequence comprising at least 38 consecutive nucleotides from SEQ ID No: 1;
 - (iii) a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by SEQ ID No: 1;
 - (iv) a polypeptide whose sequence is set forth in SEQ ID No: 14;
 - (v) an immunogenic fragment comprising at least 12 consecutive amino acids from SEQ ID No: 14; and
 - (vi) a polypeptide as defined in (i) to (iv) or an immunogenic fragment as defined in (v) which has been modified without loss of immunogenicity, wherein said modified polypeptide or fragment is at least 75% identical in amino acid sequence to the corresponding polypeptide of (i) to (iv) or the corresponding fragment of (v).

28. A vaccine comprising at least one fusion protein, wherein the fusion protein comprises:

- (a) a first polypeptide selected from any one of:
 - (i) a polypeptide encoded by SEQ ID No: 1;

- B6
- (ii) a polypeptide encoded by a nucleic acid sequence comprising at least 38 consecutive nucleotides from SEQ ID No: 1;
 - (iii) a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by SEQ ID No: 1;
 - (iv) a polypeptide whose sequence is set forth in SEQ ID No: 14;
 - (v) an immunogenic fragment comprising at least 12 consecutive amino acids from SEQ ID No: 14; and
 - (vi) a polypeptide as defined in (i) to (iv) or an immunogenic fragment as defined in (v) which has been modified without loss of immunogenicity, wherein said modified polypeptide or fragment is at least 75% identical in amino acid sequence to the corresponding polypeptide of (i) to (iv) or the corresponding fragment of (v); and
- (b) a second polypeptide.
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IN THE FIGURES:

/ Proposed new Figures 14-26 are submitted herewith. Marked up versions of Figures 14-26 are submitted, with the changes marked in red.

REMARKS

I. Summary of the Amendments

The Sequence Listing has been revised to add SEQ ID NOs: 27 to 54. The new sequences in the Sequence Listing are supported at Figures 14 to 26, which show explicitly the sequences.

Claims 8, 9, 27 and 28 have been amended to remove non-elected subject matter. Claims 1, 2, 18, 19 and 21 have been amended to recapture subject matter cancelled by the preliminary amendment dated June 22, 2001. Claims 1, 2 and 21, as amended, are the same as claims 40, 41 and 60 attached with the International Preliminary Report. The subject matter of claims 18 and 19, as amended, is found in